

# IO2019

## Title

# Sectorization for managing maintenance technicians

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## Abstract (200 palavras)

Sectorization problems consist in dividing a large region into smaller regions, in order to have a better organization of the region, or to simplify a large problem into smaller sub-problems, or to obtain groups with similar characteristics. To evaluate the quality of the solutions, three criteria are commonly used: Equilibrium (the sectors should be identical portions of the whole), Compactness (regular forms like circles are preferred, avoiding sectors shaped with 'tentacles'), and Contiguity (avoid sectors divided into portions). Depending on the application, other criteria can also be considered, therefore multicriteria approaches should be used.

Sectorization problems can arise when designing political districts, defining sales territories, managing routes for distribution of goods or collecting municipal waste, assigning neighborhoods to schools, locating health care services, police stations, or fire brigades.

This talk will address the sectorization in an elevator maintenance company, where the definition of the zones assigned to each technician have an impact on the company's efficiency and quality of service. In order to define the best sectorization, not only the maintenance plan should be considered, but also the unplanned interventions. We will discuss the different solution methods that can be applied to this case.

**Keywords**

Sectorization, Maintenance, Multicriteria, Logistics

**Topics**

Decision Support Systems, Decision Analysis

OR in Services

Logistics

Multicriteria Decision Making

Transportation, Traffic, VRP

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